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 **United States
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Soil
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Illinois
Department of
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Division of
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Resources



FLOODPLAIN MANAGEMENT RECONNAISSANCE STUDY REPORT

VIRGINIA CASS COUNTY



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FLOODPLAIN MANAGEMENT
RECONNAISSANCE STUDY A / A

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UNITED STATES
Department of Agriculture
Soil Conservation Service A ; A
Champaign, Illinois

↪ In cooperation with

STATE OF ILLINOIS
Department of Transportation
Division of Water Resources. — —

September 1985

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CITY OF VIRGINIA
RECONNAISSANCE STUDY

INTRODUCTION

Use of floodprone areas can be a severe problem in Illinois. Urbanization and floodplain encroachment are increasing the severity of this problem. Over 800 communities in Illinois have been identified as having flooding problems.

The Illinois Division of Water Resources (DWR) is the responsible state agency for urban flood control and for setting priorities of flood studies within urban areas. The Soil Conservation Service is providing assistance to the Division of Water Resources in setting these priorities. A joint coordination agreement was executed between the Division of Water Resources, State of Illinois, and the USDA, Soil Conservation Service on April 30, 1976 and revised in December 1978 to furnish technical assistance in carrying out Flood Hazard Studies. These studies are carried out in accordance with Federal Level Recommendation 3 of "A Unified National Program for Flood Plain Management," and under Section 6 of Public Law 83-566. A plan of study was executed in October 1984 for reconnaissance studies for 9 Illinois communities. These reconnaissance studies will utilize existing floodplain information, historical high water profiles, and the 100 year floodplain from flood insurance studies when available. Average annual damages are estimated for the structures within the floodplain.

This study was conducted and the report provided to: 1) evaluate needs for additional future studies, 2) estimate average annual damages, 3) provide an updated estimate of the 100 year floodplain and map, and 4) provide guidance and recommendations to the community for improved floodplain management.

STUDY AREA DESCRIPTION

The City of Virginia is located in Cass County, Illinois, approximately 15 miles north of Jacksonville on Illinois State Route #78. Beardstown is 13 miles west of Virginia on Illinois State Route #125. The population of Virginia is 1,825, according to the 1980 census.

Transportation facilities within the Virginia area consist of the above mentioned routes. The rail service that had served the community has been discontinued and abandoned. County roads connects the city to other communities and highways in the immediate area.

The community is located in an area that is mainly agricultural. Because of the rolling terrain, some grassland areas still exist. Some of the steep areas along the ditches are used as pasture for the few livestock that remain in the area. The ditches in the immediate area are narrow and winding, with trees and brush growing along the banks. Since most of these outlet ditches have adequate grade, they are left in their natural state and have not been cleaned out for several years. Because of this condition, trees, brush, and debris at times will block or restrict the flow of the outlet ditches.

Due to the current intense cropping systems, runoff water from the moderately to steep rolling farm ground is more rapid than it once was. With very little wheat, oats, and legumes in the crop rotation, the runoff rate has been accelerated. Fall tillage, and excessive spring

tillage is still being done at a rate that is leaving the soil in a highly erosive state from fall, winter, and spring runoff.

The main stream that flows through Virginia is Clear Creek, with a drainage area of 3.1 square miles at the area below the sewage disposal ponds. A tributary from the south contributes 1.1 square miles of drainage to the total watershed. All of this runoff eventually flows into Indian Creek, which eventually flows into the Illinois River below Beardstown. The drainage is in the Mississippi River Basin, hydrologic unit #07130011, Indian Creek subwatershed #010.

In general, the watershed east of Virginia is gently rolling cropland, with small areas of 5 to 10 percent slopes. The steeper terrain below the sewage disposal ponds has more erosion. Annual precipitation for the area is normally 35 inches. Usually more than 60 percent of the normal precipitation occurs during the growing season of May through September.

The soils in and around the city are Tama, Ipava, Sable, Hartsburg, Elkhart, and Tullula-Bald. Hartsburg and Sable are silty clay loams, while the remaining soils are all silt loams. Sable and Hartsburg are poorly drained soils, while Ipava is usually somewhat poorly drained. The remaining soils are well drained soils. They will range in slope from 0 to 30 percent. The steeper slopes are fairly small and minor drainage areas of the watershed.

NATURAL VALUES

The City of Virginia, is located in an agricultural area that is characterized by mainly corn and soybean rotations. Several patches of timber and wooded areas are located around Virginia. A large percentage of these wooded areas are directly north of the community, where the topography has much more slope. As stated, some grassland is also present in the area. These areas help provide a large amount of varying quality habitat, as well as, important travel routes for wild life.

The wide variety of plant and animal species present, generally make the area a pleasant place for people to live, work and play.

FLOOD PROBLEMS

Flooding along Clear Creek and its tributary is generally the result of local, heavy rainfalls and could occur during any part of the year.

Since most of the flooding is due to heavy rainfalls over a relatively small watershed, flooding is generally of short durations. According to local residents, the flooding of homes has never been a problem for the city residents. No one can remember a rainfall larger than 5 1/2 inches, the equivalent of a 25 year frequency storm, which at the time caused only minor damages, to lawns and small storage sheds.

A 100 year frequency storm would be 6.6 inches of rainfall in 24 hours. Since the homes are constructed away from the ditches, only minor home damages would result during this intense storm. Some streets tend to flood, but usually after 2 hours, the water has receded to a point where there are no remaining problems.

The main ditch and tributaries cross under the city's streets, ten times, however, only minor street damages are encountered. As stated before, the city and its residents for the most part, have done a good job of flood reduction by keeping home construction away from the low areas.

One home on the north side of the community has suffered from water coming into the basement. When built, the contractor recommended that a "back up" valve be installed. The home owner did not install this valve and has had many problems.

An area at the southeast section of the city must still rely on their existing septic systems. As of this date, the city has not extended a sanitary sewer to that part of the town. The remaining areas of the city are all served by sanitary and storm sewer lines. The existing sewage treatment plant has very few problems.

Areas not served by storm sewers do not seem to have water related problems. A combination of adequate soils and proper grade seem to let the runoff escape without causing any undue hardships or flooding.

A few basements have minor water related problems, which are from seepage into the basements, not actual flooding.

The city water supply is from a lake located north of the community. The lake reportedly has approximately 15 years of life left. Siltation over the years has rapidly reduced the amount of water available to the city. Therefore, the city recently invested the necessary capital to drill a deep well in the Sangamon bottoms. This well is now in use, but the lake can also still be used.

An area at the northwest part of the community does have a minor wetness problem. Runoff from the newly constructed state maintenance sheds and surrounding area, is collecting and causing a small ponding area. This area is relatively small, but shallow ponded water is trapped for several hours after a medium to large rainfall.

PROBLEM SUMMARY

Estimated average annual damages from floodwaters to the problems listed above are as follows:

Number of Homes or Trailers	Number of Garages and Sheds	Total Value	Average Annual Damages
6	6	\$108,000	\$700

Additional damages due to flooding and water related problems:

Approximately 10 wet basements	\$ 200
Street Maintenance	800
Yard Damages	<u>1,000</u>
Total Additional Expense	\$ 2,000

Total estimated average annual damages for the City of Virginia equals \$2,700. Flood damage starts at the 25 year frequency storm.

EXISTING FLOODPLAIN MANAGEMENT

The City of Virginia has participated in the emergency phase of the National Flood Insurance Program since August 15, 1975. Business and homeowners may purchase flood insurance. The city does require building permits. They also have zoning ordinances in effect.

RECOMMENDATIONS

It is recommended that the City of Virginia continue to participate in the National Flood Insurance Program. The city may want to inquire into the possibilities of converting over to the regular program.

Existing septic systems must be kept in proper working conditions to avoid possible health hazards.

The city could extend the sanitary sewer lines to the area of the community that is now devoid of this system. All residences could then be connected to the system as soon as possible, without putting anyone into a financial hardship.

Rooftop runoff should not be drained into the sanitary sewers as it could overload the existing system and increase the treatment costs.

Basement drains should not outlet into the existing ditches as some do now. These should outlet into the storm sewers. If water from washing machines is also present, they should outlet into the sewage treatment plant.

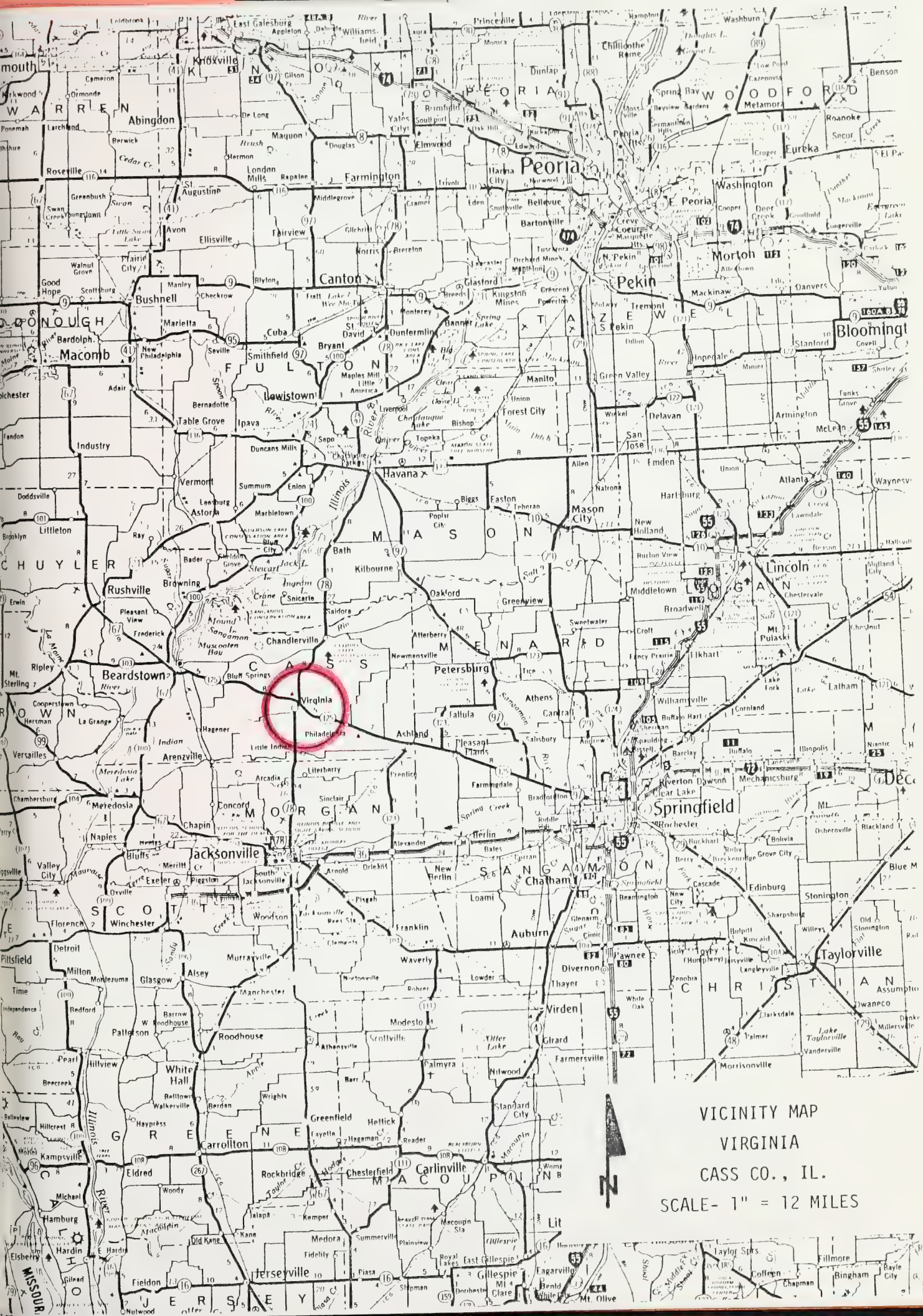
After each storm event, the city street department should check all culverts and bridges and remove any debris that has collected in the area.

A low priority should be assigned for future detailed floodplain management studies in Virginia.

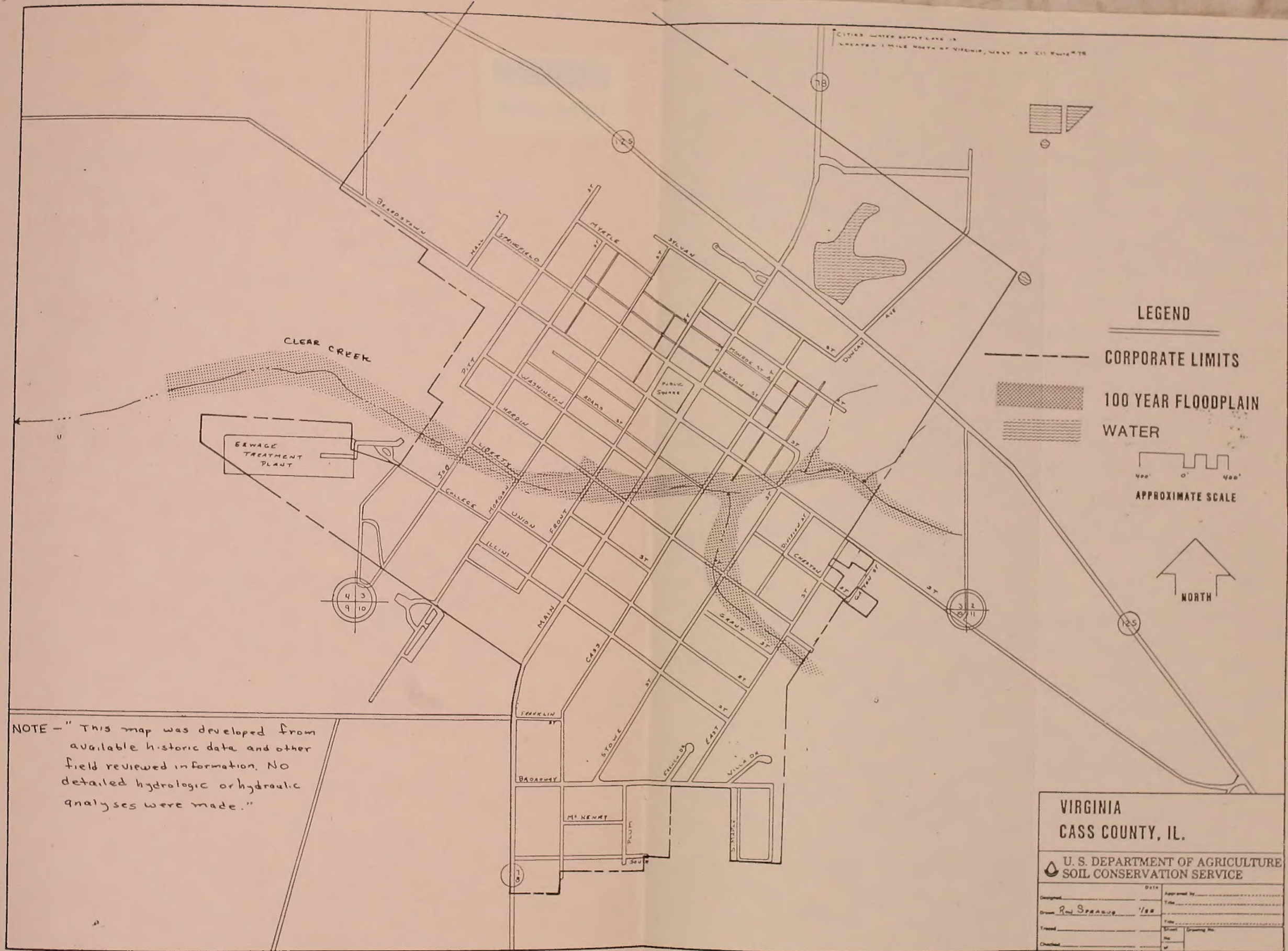
INVESTIGATION AND ANALYSIS

No additional calculations, discharges, or profiles were made as a part of this study. The inventory of flooding and water problems is based on a field review and interviews with local citizens. The Flood Hazard Boundary Map, along with interviews with local citizens, was used to determine the 100-year floodplain. Aerial photographs were provided by DWR. Damages were based on property value estimates during field review, and the application of damage factors. These factors came from previous detailed floodplain management studies.

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VICINITY MAP
VIRGINIA
CASS CO., IL.
SCALE- 1" = 12 MILES





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